Table of Contents, Volume 24

Number 1, March 1978

Multivariate analysis of physical site data for wildland classification ..... *David L. Radloff, David R. Betters* 2

Drying and storing stratified ponderosa pine and Douglas-fir seeds ..... *H. Rodger Danielson, Yasuomi Tanaka* 11

Carbon dioxide uptake of pine seedlings after cool storage .. *I. J. McCracken* 17

Generalized least squares estimation of yield functions ..... *I. S. Ferguson, J. W. Leech* 27

An in vitro study of seed dormancy in sugar maple ..... *Carol A. Janerette* 43

Modeling feeding preferences by hare and deer among Douglas-fir genotypes ..... *Roy R. Silen, Edward J. Dimock II* 57

Effect of ethephon on suckering of excised roots and rooting of cuttings in trembling aspen ..... *George A. Schier, Robert B. Campbell* 66

Leaf conductance and photosynthesis in four species of the oak-hickory forest type ..... *T. M. Hinckley, R. G. Aslin, R. R. Aubuchon, C. L. Metcalf, J. E. Roberts* 73

Moisture stress threshold of susceptibility to fir engraver beetles in pole-size white firs ..... *George T. Ferrell* 85

Prescribed burning reduces severity of annosus root rot in the South ..... *R. C. Froelich, C. S. Hodges, Jr., S. S. Sackett* 93

Comparative photosynthesis and respiration of trembling and bigtooth aspens in relation to growth and development ..... *Obinani A. Okafo, James W. Hanover* 103

Comparison of presettlement and modern upland boreal forests on Isle Royale National Park ..... *Robert A. Janke, Dennis McKaig, Randall Raymond* 115

Nutrient distribution and flux in a mature oak-hickory forest ..... *G. L. Rolfe, M. A. Akhtar, L. E. Arnold* 122

Variation in maximum leaf area of coniferous forests in Oregon and its ecological significance ..... *R. H. Waring, W. H. Emmingham, H. L. Gholz, C. C. Grier* 131

Notes

Program GLS—Generalized least squares for two-stage model development ..... *J. A. Miles, I. S. Ferguson, J. W. Leech* 42

A tannic acid-ferric chloride-toluidine blue stain for wood amyloplasts embedded in epoxy resin ..... *Thompson Demetrio Pizzolato* 49

California red fir literature: Some corrections and comments ..... *Donald T. Gordon* 52

Viability and fertility of vacuum dried pollen of 5-needle pine species ..... *Clifford E. Ahlgren, Isabel F. Ahlgren* 100

Common regressions to estimate tree biomass in tropical stands ..... *T. R. Crow* 110

Reviews

On systems analysis. *Reviewed by Rolfe A. Leary* 25

Physiological plant pathology. Encyclopedia of plant physiology, new series volume 4. *Reviewed by Louis Shain* 64

Air pollution—phytotoxicity of acidic gases and its significance in air pollution control. *Reviewed by Eileen Brennan* 114

Water and plant life, problems and modern approaches. *Reviewed by C. Anthony Federer* 140

Announcements

Symposium: Structural use of wood in adverse environments 72

Call for papers: National symposium on systemic chemical treatments in tree culture 84

Call for papers: Central Hardwood Forest Conference 121

Table of Contents, Volume 24

Number 1, March 1978

Multivariate analysis of physical site data for wildland classification ..... *David L. Radloff, David R. Betters* 2

Drying and storing stratified ponderosa pine and Douglas-fir seeds ..... *H. Rodger Danielson, Yasuomi Tanaka* 11

Carbon dioxide uptake of pine seedlings after cool storage .. *I. J. McCracken* 17

Generalized least squares estimation of yield functions ..... *I. S. Ferguson, J. W. Leech* 27

An in vitro study of seed dormancy in sugar maple ..... *Carol A. Janerette* 43

Modeling feeding preferences by hare and deer among Douglas-fir genotypes ..... *Roy R. Silen, Edward J. Dimock II* 57

Effect of ethephon on suckering of excised roots and rooting of cuttings in trembling aspen ..... *George A. Schier, Robert B. Campbell* 66

Leaf conductance and photosynthesis in four species of the oak-hickory forest type ..... *T. M. Hinckley, R. G. Aslin, R. R. Aubuchon, C. L. Metcalf, J. E. Roberts* 73

Moisture stress threshold of susceptibility to fir engraver beetles in pole-size white firs ..... *George T. Ferrell* 85

Prescribed burning reduces severity of annosus root rot in the South ..... *R. C. Froelich, C. S. Hodges, Jr., S. S. Sackett* 93

Comparative photosynthesis and respiration of trembling and bigtooth aspens in relation to growth and development ..... *Obinani A. Okafo, James W. Hanover* 103

Comparison of presettlement and modern upland boreal forests on Isle Royale National Park ..... *Robert A. Janke, Dennis McKaig, Randall Raymond* 115

Nutrient distribution and flux in a mature oak-hickory forest ..... *G. L. Rolfe, M. A. Akhtar, L. E. Arnold* 122

Variation in maximum leaf area of coniferous forests in Oregon and its ecological significance ..... *R. H. Waring, W. H. Emmingham, H. L. Gholz, C. C. Grier* 131

Notes

Program GLS—Generalized least squares for two-stage model development ..... *J. A. Miles, I. S. Ferguson, J. W. Leech* 42

A tannic acid-ferric chloride-toluidine blue stain for wood amyloplasts embedded in epoxy resin ..... *Thompson Demetrio Pizzolato* 49

California red fir literature: Some corrections and comments ..... *Donald T. Gordon* 52

Viability and fertility of vacuum dried pollen of 5-needle pine species ..... *Clifford E. Ahlgren, Isabel F. Ahlgren* 100

Common regressions to estimate tree biomass in tropical stands ..... *T. R. Crow* 110

Reviews

On systems analysis. *Reviewed by Rolfe A. Leary* 25

Physiological plant pathology. Encyclopedia of plant physiology, new series volume 4. *Reviewed by Louis Shain* 64

Air pollution—phytotoxicity of acidic gases and its significance in air pollution control. *Reviewed by Eileen Brennan* 114

Water and plant life, problems and modern approaches. *Reviewed by C. Anthony Federer* 140

Announcements

Symposium: Structural use of wood in adverse environments 72

Call for papers: National symposium on systemic chemical treatments in tree culture 84

Call for papers: Central Hardwood Forest Conference 121

Number 2, June 1978

Regulation of Douglas-fir seedling growth and hardiness by controlling photoperiod — *Douglas D. McCreary, Yasuomi Tanaka, Denis P. Lavender* 142

Tree diameter distributions and replacement processes in southeast Texas forests — *P. A. Harcombe, P. L. Marks* 153

Development of the terminal bud and shoot of slash pine saplings — *Ronald M. Lanner* 167

Spatial and temporal variations in carbon dioxide concentrations in an oak-hickory forest ravine — *H. E. Garrett, G. S. Cox, J. E. Roberts* 180

Growth and ectomycorrhizal development of loblolly pine seedlings in fumigated and nonfumigated nursery soil infested with different fungal symbionts — *Donald H. Marx, William G. Morris, John G. Mexal* 193

Seasonal distribution of ectomycorrhizae in a mature Douglas-fir/larch forest soil in western Montana — *A. E. Harvey, M. F. Jurgensen, M. J. Larsen* 203

Spacing of roads and landings to minimize timber harvest cost — *Penn A. Peters* 209

Stylet-bearing nemas and growth of ponderosa pine seedlings — *D. R. Viglierchio* 222

Income and price elasticities in the world demand for paper and paperboard — *Joseph Buongiorno* 231

Timber quality of northern hardwood regrowth in the Lake States — *William E. Miller, Kenneth J. Kessler, Jr., John H. Ohman, John T. Eschle* 247

Spatial patterns and distance distributions in young seeded loblolly pine stands — *Richard F. Daniels* 260

Count sampling in forestry — *Hans T. Schreuder* 267

Biomass and nutrient content of quaking aspen at two sites in the western United States — *Dale L. Bartos, Robert S. Johnston* 273

Annual variation in effect of 2,4-D and 2,4,5-T on ponderosa pine — *H. J. Gratkowski* 281

A method for determining the precision of site index estimates made from site index prediction functions — *Robert A. McQuilkin, Robert Rogers* 289

Isoenzyme activities differ in compatible and incompatible Douglas-fir graft unions — *Donald L. Copes* 297

Validation and refinement of a hazard rating model for fir engraver-caused mortality in grand fir stands — *James A. Moore, John A. Schenk, Charles R. Hatch* 309

Notes

Transpiration reduction of shrub live oak by picloram — *Edwin A. Davis* 217

Progeny of specific loblolly pine clones vary in fusiform rust resistance according to seed orchard of origin — *H. R. Powers, Jr., Bruce J. Zobel* 227

Aspen sucker regeneration following burning and clearcutting on two sites in the Rocky Mountains — *George A. Schier, Robert B. Campbell* 303

Reviews

Tree physiology and yield improvement. *Reviewed by Stanley B. Carpenter* 190

A manual on species and provenance research with particular reference to the tropics. *Reviewed by Jacob L. Whitmore* 192

Water at the surface of the earth: An introduction to ecosystem hydrodynamics. *Reviewed by Lloyd W. Gay* 288

Manuscript reviewers, 1977 313

Number 3, September 1978

An analysis of forest tax equity guides ..... *W. David Klemperer* 318

Some measured and simulated plant water relations of yellow-poplar ..... *R. J. Luxmoore, D. D. Huff, R. K. McConathy, B. E. Dinger* 327

Estimating fuel weights in slash pine-palmetto stands ..... *W. Henry McNab, M. Boyd Edwards, Jr., Walter A. Hough* 345

The two-way median fit: a sensitive statistical procedure to detect response of trees to fertilization ..... *Thomas M. Gerig, H. T. Schreuder, D. M. Crutchfield, C. G. Wells* 358

Estimating solar radiation under variable cloud conditions ..... *Donald R. Satterlund, Joseph E. Means* 363

White fir growth and foliar nutrient concentration in California plantations ..... *Kânı Işık* 374

Nutrient budgets of Appalachian and Cascade Region watersheds: a comparison ..... *G. S. Henderson, W. T. Swank, J. B. Waide, C. C. Grier* 385

Growth and nutrition of loblolly pine on coal mine spoil as affected by nitrogen and phosphorus fertilizer and cover crops ..... *G. W. Bengtson, D. A. Mays* 398

Estimating economic costs of allocating land to wilderness ..... *J. Greg Jones, Wendell G. Beardsley, David W. Countryman, Dennis L. Schweitzer* 410

Estimating psychological disutility from damaged forest stands ..... *Gregory J. Buhyoff, William A. Leuschner* 424

Note

Estimating knot-free wood under branch stub scars in sugar maple ..... *Matti J. Hyvarinen* 341

Reviews

Tree rings and climate. *Reviewed by Francis R. Herman* 409

Man and the boreal forest. *Reviewed by Leslie A. Viereck* 423

Notice

Introduction to renewable resource inventory methods—a short course 344

Forest Science Monograph 20: Temporal and spatial variations in the water status of forest trees. By T. M. Hinckley, J. P. Lassoie, and S. W. Running. (Mailed concurrently with this issue of *Forest Science* as a separate.)

Number 4, December 1978

Toward a more integrated regional timber model ..... *Kenneth S. Fowler* 434

Foliar developmental effects on forest floor light quality ..... *B. W. Floyd, J. W. Burley, R. D. Noble* 445

Effects of temperature, nutrient, and moisture stresses on dormancy of blue spruce seedlings under continuous light ..... *Eric Young, James W. Hanover* 458

Simulation studies on line intersect sampling of forest residue ..... *Stewart G. Pickford, John W. Hazard* 469

Carbohydrates, lipids, and proteins in ungerminated and germinated *Quercus alba* embryos ..... *J. A. Vozzo* 486

Analysis of differences in height growth among populations in a nursery selection study of Douglas-fir ..... *W. S. Overton, Kim K. Ching* 497

Analysis of economic impacts on thinning and rotation for Douglas-fir, using dynamic programming ..... *J. Douglas Brodie, Darius M. Adams, Chiang Kao* 513

Estimating the southern pine beetle's impact on reservoir campsites ..... *William A. Leuschner, Rodney L. Young* 527

Effect of past European pine shoot moth infestations on volume yield of pole-sized red pine ..... *William E. Miller, Robert F. Wambach, Robert A. Anfang* 543

Comparative growth responses of northern red oak and chestnut oak seedlings to varying photoperiods ..... *Mark J. Immel, Robert L. Rumsey, Stanley B. Carpenter* 554

Variation in aluminum tolerance among six genera of trees ..... *L. H. McCormick, K. C. Steiner* 565

The contribution of aspen bark photosynthesis to the energy balance of the stem ..... *Knowlton C. Foote, Michail Schaedle* 569

Probability of attack by southern pine beetle in relation to distance from an attractive host tree ..... *P. C. Johnson, J. E. Coster* 574

Notes

Marking guides to reduce *Armillaria* root rot in ponderosa pine are effective ..... *Lewis F. Roth, Leonard Rolph* 451

Comparison of tree biomass estimators—dbh and sapwood area ..... *J. A. Kendall Snell, James K. Brown* 455

The production of functional pollen and ovules by pine seedlings less than 1 year old ..... *L. C. Johnson, W. B. Critchfield* 467

Seedling density influences the early growth of planted sycamore ..... *Roger P. Belanger, William D. Pepper* 493

Solute absorption by seeds of sugar maple ..... *Carol A. Janerette* 509

Variation in lodgepole pine: family response to stress induced by polyethylene glycol 6000 ..... *David A. Perry, James E. Lotan, Paul Hinz, Martin A. Hamilton* 523

Development of *Pinus* seedlings grown from seed subjected to drying and wetting cycles ..... *Vincent M. Russo* 537

Overstory attributes, light, throughfall, and the interpretation of overstory-understory relationships ..... *Steven P. McLaughlin* 550

Biological control of decay fungi: a wood disk evaluation method ..... *Curt Leben* 560

Reviews

The role of arthropods in forest ecosystems. *Reviewed by Clayton S. Gist* 444

Forest management in Canada, Volume 1. *Reviewed by J. Douglas Brodie* 483

Plant response to wind. *Reviewed by H. Richard Holbo* 485

Environmental role of nitrogen-fixing blue-green algae and asymbiotic bacteria. *Reviewed by C. T. Wheeler* 542

Notice

1978 catalog available—Department of Energy 454

Key-word index 581

Author index 593